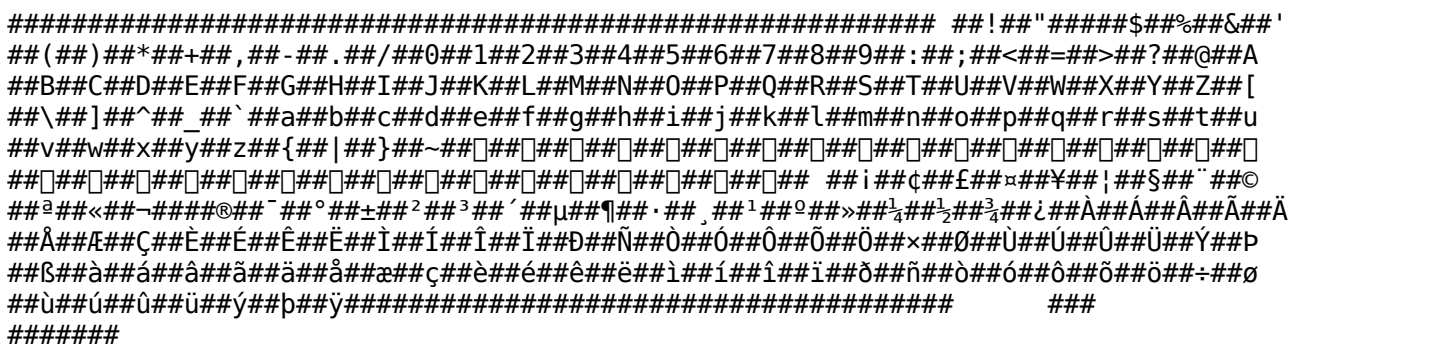

#$##########################ÿ□#ÿÿd#########d#########9#Õý##Ùù□ü%
¦### ##########ÿ□#ÿÿd#########□#########c### Thyroid anatomy Approach to thyroid disease Diagnostics Cases When to consult Endocrinologist#

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####ÿ□#ÿÿd#########d#########9#Æý###ü□üÉ#§#ÿÿ####ÿÿ#####ÿ□#ÿÿd#########d########
#J### Normal Diffusely enlarged Atrophic Single nodule Multinodular Absent
```

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#
##########################ÿ□#ÿÿd#########d#########9#□þ##OüFýñ#9###$##########ÿ□
#ÿÿd#########□#########G###Structure   Physical Exam     Ultrasound    MRI
Technetium scan#
```

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# ##########################ÿ#ÿÿd#########d#########9##ÿ##$úaýU
      a#ÿÿ####ÿÿ#####ÿ#ÿÿd#########d#########?###Function    Serum assays -
TSH, Free T4    Radioiodine Uptake#
```

##########################ÿ□#ÿÿd#########d#########9#□ý##øÀü□
(#ÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########Ø###Pt is a 25 yo female who presents to GIMC with complaints of palpitations and tremor for approximately six weeks.
Remarkable PE findings: Pt appears nervous HR 110 Nontender, diffusely enlarged thyroid (goiter)

#
##########################ÿ#ÿÿd#########d#########9#{ý##Ëø±ü####ÿÿ####ÿÿ#####ÿ
#ÿÿd#########d#############Definition - refers to clinical syndrome of hypermetabolism resulting from increased serum concentration of T4 and/or T3, regardless of cause. Not synonymous with hyperthyroidism Hyperthyroidism - increased thyroid hormone biosynthesis and secretion by the thyroid gland#

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À#ÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########³###Symptoms - nervousness, fatigue, weakness, increased perspiration, heat intolerance, tremor,hyperactivity, palpitation, change in appetite, weightchange, menstrual irregularitiesSigns - hyperactivity, tachycardia, atrial arrhythmia,systolic hypertension, stare, eyelid retraction, tremor,hyperreflexia, muscle weakness*Older patients - have fewer signs and symptomsof sympathetic activation and more cardiovascular dysfunction.#

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############################ÿ▯#ÿÿd#########d#########9#▯ý##Æø³üÍ
L### ##########ÿ▯#ÿÿd#########d#########x###Lab Data  TSH usually low Free T4
elevated Thyroid antibodies (may be pos or neg)Radioiodine UptakeTechnetium Scan
```

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÷Hüö÷Hüö÷Yüù÷[ü##########D#####9#!ý##øøÇû<
□##############ÿ□#ÿÿd#########d#########$###Goiter with thyrotoxicosis Grave□s
Disease - autoimmune disorder  - TSH receptor antibodies stimulate thyroid  -
Most common cause of thyrotoxicosis,     representing 60-90% of cases  - May
present with goiter, ophthalmopathy,     myxedema  - Peak age incidence 20-49yrs
- Women>Men
```

#########################ÿ□#ÿÿd##########d#########9#! ý##Û÷öû##n#ÿÿ####ÿÿ#####ÿ□#ÿÿd#########□#########a### Subacute Thyroiditis - genetic (HLA-B35) predisposition usually occurring after viral illness - Thyroid injury from anti TPO antibodies - Release of stored thyroid hormone results in transient thyrotoxicosis - Gland is usually tender - ESR may exceed 100 - Thyrotoxic stage may last months followed by months of hypothyroidism

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¹#ÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########y###Differentiate using Radioiodine
Uptake Counts elevated in Grave□s dz (40-70%) Counts low in Subacute thyroiditis
(<10%)#
```

#$##########################ÿ□#ÿÿd#########d#########9#!
ý##2û±ûù#3#ÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########]### Beta blockers Antithyroid
drugs - PTU - Methimazole Radioactive Iodine (131I) Surgery#

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C#ÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########ë###Pt is 62 yo female with pmhx pertinent for esophageal CA s/p XRT who complains of increasing fatigue, frequent confusion and weight gain.Remarkable PE findings: Pt spoke and moved slowly HR 50 Thyroid not palpable Hyporeflexia#

#
##########################ÿ□#ÿÿd#########d#########9#@ü##Dø□ûm#□##############ÿ□
#ÿÿd#########Z#########z###Definition - disorder of the thyroid gland causing decreased thyroid hormone production andsecretion. Most common disorder of thyroid function Worldwide - iodine deficiency is most common   cause Iodine replete areas - chronic autoimmune   thyroiditis is most common cause May be transient May be associated with elevated serum   cholesterol,CPK, AST and LDH

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Ú#ÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########í###Definition - decreased thyroidal stimulation byTSH. Also referred to as central or hypothyrotropic hypothyroidism Caused by either pituitary or hypothalamic disease Very uncommon TSH is usually low or inappropriately normal#

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ï#ÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########è###Symptoms - fatigue, lethargy, mental impair-ment, depression, cold intolerance, hoarseness, dryskin, decreased perspiration, weight gain, decreased appetite, constipation, menstrual irregularities, arthralgias, parasthesiasSigns - slow movements, slow speech, hoarseness,bradycardia, dry skin, non-pitting edema, hyporeflexia,delayed relaxation of reflexes* Older patients - tend to have fewer signs and symptoms of hypothyroidism and those they have tendto be less specific.

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############################ÿ□#ÿÿd#########d#########9#\þ##$úUüé
      W#ÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########f###               Lab Data TSH
usually elevated Free T4 reduced Thyroid antibodies (may be pos or neg)
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Atrophic gland with primary hypothyroidism Radiation therapy - results in destruction of thyroid tissue. Chronic autoimmune thyroiditis - may be atrophic or goitrous. TSH receptor-blocking antibody positive. Differentiation based on pt history and antibody results.

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ÿ□#ÿÿd#########d#########□###Primary Hypothyroidism Levothyroxine (LT4, Synthroid)Secondary Hypothyroidism (Central) Directed at source Glucocorticoids followed by levothyroxine#

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#kÿÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########B###Pt is 42 yo male who noticed a
□lump□ in his neck while shaving.
```

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##ÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########□###Remarkable PE findings: WDWN white male in NAD Vital signs WNL Palpable, firm, nontender 3 cm nodule left upper lobe of thyroid gland#

#########################ÿ#ÿÿd#########d#########9##ÿ##Dø_þ? #¦#############ÿ#ÿÿd#########_#########-### In the US, lifetime risk for developing a nodule   is 5-10% Studies show 50% of people at autopsy have either single or multiple nodules Critical issue is to determine whether benign or   malignant 5-10% of clinically detectable hypofunctioning   (cold) nodules will be malignant#

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Ò##############ÿ□#ÿÿd#########□#########□### Benign adenoma Hemorrhage in the gland Lobulation of normal thyroid tissue Primary malignancy Metastatic malignancy Intrathyroid cyst Toxic adenoma#

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&#ÿÿ####ÿÿ#####ÿ□#ÿÿd#########d#########□###For Patients with: Grave□s disease Multinodular goiter Single palpable nodule Central disease (pituitary or hypothalamic) Patients resistant to therapy

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